

ACCESSION NR: AP4031103

S/0236/64/000/001/0003/0009

AUTHOR: Sty*ro, B.I.; Vebra, E.I.; Shopauskas, K.K.

TITLE: The radioactivity profile in clouded air

SOURCE: AN LitSSR. Trudy*. Seriya B, no. 1, 1964, 3-9

TOPIC TAGS: radioactivity, distribution in air, distribution in cloud, radon decomposition, coagulation coefficient

ABSTRACT: The distribution of radioactivity in the air in a cloud was studied and the profile obtained was associated with the coagulation coefficient and other structural elements of the cloud. Measurements were made of the radioactivity in the air inside and outside clouds by probing from aircraft; and a series of experimental radioactivity profiles were obtained. There is significantly less value never decreases to zero, and the variation of the radioactivity concentration in the cloud is insignificant. This residual radioactivity is closely connected with the microphysical characteristics of clouds and depends on the magnitude of the coefficient of coagulation of cloud droplets with radioactive aerosols. Thus

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it appeared possible to determine this coefficient of coagulation from the radioactivity profile in the cloud. Formulas were derived for determining the change of radioactivity in clouded air (N_z = the number of atoms formed by radon decomposition) according to the altitude:

$$N_z = \left[N_{z,0} - \frac{\lambda_{Rn} N_{Rn,0}}{\lambda_z + kn - \alpha w} \right] e^{-\frac{\lambda_z + kn}{w} z} + \frac{\lambda_{Rn} N_{Rn,0}}{\lambda_z + kn - \alpha w} e^{-\alpha z}$$

and when $\alpha = 0$, i.e., when radon concentration is constant:

$$N_z = \left[N_{z,0} - \frac{\lambda_{Rn} N_{Rn,0}}{\lambda_z + kn} \right] e^{-\frac{\lambda_z + kn}{w} z} + \frac{\lambda_{Rn} N_{Rn,0}}{\lambda_z + kn}$$

where λ_z is the isotope decomposition constant; $N_{Rn,z}$ is the concentration of radon in the cloud and $N_{Rn,0}$ at the lower boundary of the cloud; w is the rate of vertical filtration of air through the cloud; z is the altitude; n , the concentration of the drops; λ_{Rn} is radon decomposition, and k is the coefficient of coagulation of drops with radioactive aerosols. The magnitude of the coefficient of coagulating radioactive aerosols with cloud drops is of the order of 10^{-5} 1/sec. Orig. art. has: 4 figures, 1 table and 8 equations.

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S/0251/64/033/001/0061/0067

ACCESSION NR: AP4018352

AUTHORS: Sty*ro, B. I.; Vebra, E. I.; Shopauskas, K. K.; Khundzhua, T. G.

TITLE: On the coagulation of radioactive aerosols with cloud drops (Presented by A. N. Mirianashvili, corresponding member of the Academy on May 12, 1963)

SOURCE: AN GruzSSR. Soobshcheniya, v. 33, no. 1, 1964, 61-67

TOPIC TAGS: radioactive aerosol, cloud drop, coagulation coefficient, filtering system D2 O3 27 v, nuclear emulsion A 2, microscope system MBI 2, turbulent mixing, Brownian motion

ABSTRACT: A new experimental method is presented for determining the coagulation of radioactive aerosols with cloud drops. For measuring the radioactivity in the atmosphere an intake nozzle was installed above the overhead port of an aircraft at a distance of 0.5 m from the fuselage along the direction of motion of the aircraft. The air was filtered by a D-2-O3-27v system, using fiber filters. The system was so designed that the drops could not percolate into the filter (this was checked by using erythrozone). During the test flight 1 cubic meter of air was inducted in 6 minutes. The filter was then removed and brought in contact with nuclear photoemulsion of type A-2. After 20 hours of exposure, the system

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ACCESSION NR: AP4018352

was examined under a microscope of type MBI-2. The coefficient of coagulation was computed from the results to be on the order of 10^{-5} to 10^{-4} per second. The half-period of nonradioactive removal of aerosol was computed to be 1 to 2 minutes. Orig. art. has: 3 figures, 1 table, and 7 formulas.

ASSOCIATION: Akademiya nauk Gruzinskoy SSR, Institut geofiziki (Academy of Sciences Georgian SSR, Institute of Geophysics)

SUBMITTED: 12May63

DATE ACQ: 19Mar64

ENCL: 00

SUB CODE: ES

NO REF SOV: 008

OTHER: 002

Card 2/2

SHOPAUSKAS, K.K. [Šopauskas, K.]

Vertical distribution of radon decay products in the troposphere
as related to meteorological conditions. Trudy AN lit. SSR. Ser.
B.no.1s21-28 '62 (MIRA 1967)

1. Institut geologii i geografii AN Litovskoy SSR.

ACCESSION NR: AP4041454

S/0089/64/016/006/0528/0530

AUTHORS: Sty*ro, B. I.; Vebra, E. Yu.; Shopauskas, K. K.

TITLE: On some physical characteristics of hot Alpha-active aerosol particles

SOURCE: Atomnaya energiya, v. 16, no. 6, 1964, 528-530

TOPIC TAGS: aerosol, fallout, alpha contamination, radon, neptunium

ABSTRACT: The characteristics of about 20 α -active hot aerosol particles found in samples gathered near Vil'nyus at altitudes 0--3 km are described. The particles are characterized by "fans" of alpha tracks. The fan tracks corresponding to the highest energies are probably the daughter products of radon decay or some products of the neptunium family. The activity of the hot particles was determined from the number of tracks, and the dimensions could be determined by making certain assumptions relative to the particle isotopic composition.

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ACCESSION NR: AP4041454

tion. The few actually measured particle sizes lie between the values obtained when the fan is assumed to be produced by U^{235} and Pu^{239} respectively. It can therefore be concluded that the hot aerosol particles are not uniform and consist of isotopes such as U^{235} , U^{238} , Th^{232} , and Pu^{239} . It is concluded that their isotopic composition needs further study. Orig. art. has: 3 figures, 2 formulas, and 1 table.

ASSOCIATION: None

SUBMITTED: 05Aug63

ENCL: 01

SUB CODE: NP, CB

NR REF SOV: 002

OTHER: 002

Card 2/3

ACCESSION NR: AP4041454

ENCLOSURE: 01

Some properties of hot alpha-active aerosol particles

Legend:

- 1 - particle no.
- 2 - sampling flight altitude
- 3 - exposure, hr
- 4 - number of alpha tracks in fan
- 5 - activity, Cu
- 6 - dia. of act. part., microns
- 7 - measured
- 8 - calc. from U-235 radiation
- 9 - calc. from Pu-239 radiation
- 10 - ground level

1 Номер частицы	2 Высота полета при отборе пробы, м	3 Продолжительность экспозиции, ч	4 Число α-треков в фане	5 Активность, кюри	6 Диаметр активной части частицы микроны	7 измеренный	8 вычисленный по α-излучению Ум	9 на г-ни
1	1000	39,3	688	2,6·10 ⁻¹³	12	22,0		
2	1000	74	161	3,3·10 ⁻¹⁴	8	11,6		
3	1000	74	38	7,8·10 ⁻¹⁵	4	7,0		
4	1000	235	37	2,4·10 ⁻¹⁵	—	4,8		
5	1000	235	26	1,7·10 ⁻¹⁵	—	4,2		
6	1000	235	17	1,1·10 ⁻¹⁵	—	3,7		
7	1000	235	12	7,7·10 ⁻¹⁶	—	3,3		
8	1000	235	10	6,4·10 ⁻¹⁶	—	3,1		
9	1000	235	8	5,1·10 ⁻¹⁶	—	2,9		
10	1000	235	6	3,8·10 ⁻¹⁶	—	2,6		
11	1000	235	10	6,4·10 ⁻¹⁶	—	3,1		
12	1000	235	5	3,2·10 ⁻¹⁶	—	2,5		
13	870	240	400	2,5·10 ⁻¹⁴	7	10,6		
14	870	240	350	2,2·10 ⁻¹⁴	—	10,1		
15	870	240	20	1,8·10 ⁻¹⁵	—	4,4		
16	870	240	22	1,4·10 ⁻¹⁵	—	4,0		
17	870	240	7	4,4·10 ⁻¹⁶	—	2,7		
18	240	240	16	1,0·10 ⁻¹⁵	—	3,6		
19	на уровне земли	240	400	2,5·10 ⁻¹⁴	—	10,6		
20	10	240	5	3,1·10 ⁻¹⁶	—	2,4		

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STYRO, B.I.; VEBRA, E.Yu.; SHOPAUSKAS, K.K.

Some physical characteristics of hot alpha-radioactive
aerosols. Atom. energ. 16 no.6:528-530 Je '64. (MIRA 17:7)

STYRA, B. I.; VERBA, E. I.; SHOPAUSKAS, K. K.

"The determination of some parameters of radioactive aerosols removal from the air."

paper scheduled to be presented at Symp on Atmospheric Chemistry, Circulation & Aerosols, Visby, Sweden, 18-25 Aug 1965.

Hydrometeorological Service USSR.

L 3097-66 EWT(1)/EWT(m)/ECC DIAAP GS/GW
ACCESSION NR: AT5023928

UR/0000/65/000/000/0093/0101

AUTHOR: Shopauskas, K. K.

TITLE: Effect of vertical-exchange intensity on the distribution of natural radioactive matter in the free atmosphere

SOURCE: Nauchnaya konferentsiya po yadernoy meteorologii. Obninsk, 1964. Radioaktivnyye izotopy v atmosfere i ikh ispol'zovaniye v meteorologii (Radioactive isotopes in the atmosphere and their use in meteorology); doklady konferentsii. Moscow, Atomizdat, 1965, 93-101

TOPIC TAGS: nuclear meteorology, atmospheric pollution, radioactive isotope, radioactive tracer, free atmosphere, vertical diffusion, radioactive aerosol

ABSTRACT: Measurements of radioactivity in the atmosphere, made from aircraft over a 4-year period (1960-1963), combined with temperature and wind measurements made for the same period by conventional sondes before and after each flight, have been used to study and compare the distribution of atmospheric radioactivity under various atmospheric conditions (temperature inversions, extreme convection, neutral temperature stratification) in the atmospheric boundary layer and in free air. The author concludes that in the free atmosphere there is no direct dependence of radio-
Card 1/2

L 3097-66
ACCESSION NR: AT5023928

APPROVED FOR RELEASE: 08/23/2000

CIA-RDP86-00513R001549830002-9

activity distribution on temperature stratification and that the coefficient of vertical turbulent exchange k , directly measured, is the same as that derived from the use of temperature and wind-sounding data. The distribution of radioactivity in the free atmosphere depends not only on k and λ (coefficient of turbulent diffusion and radioactive decay constant) but also on other factors. The value of k characterizes the effective rate of radon influx into the next higher atmospheric layer, which in turn depends not only on the intensity of vertical turbulent exchange but on such processes as vertical currents, advective transfer, and katafrontally rising air. Averaged over a period of time, the value of k derived from a vertical profile of radioactive decay products depends mostly on the period of half-decay of the parent isotope. Orig. art. has: 5 figures, 2 formulas, and 1 table. [ER]

ASSOCIATION: none

SUBMITTED: 28Apr65

NO REF SOV: 004

ENCL: 00

OTHER: 007

SUB CODE: ES, NP

ATD PRESS: 4101

Card 2/2

L 3221-66 EWT(1)/EWT(m)/FCC/EWA(h) GS/GW

ACCESSION NR: AT5023929

UR/0000/65/000/000/0102/0106

AUTHOR: Shopauskas, K. K.

TITLE: Effect of advection on radioactivity distribution in the atmosphere

SOURCE: Nauchnaya konferentsiya po yadernoy meteorologii. Obninsk, 1964. Radio-aktivnyye izotopy v atmosfere i ikh ispol'zovaniye v meteorologii (Radioactive isotopes in the atmosphere and their use in meteorology); doklady konferentsii. Moscow, Atomizdat, 1965, 102-106

TOPIC TAGS: nuclear meteorology, radioactive isotope, radioactive tracer, radioactive aerosol, advection. 12,44,55

ABSTRACT: Results are given of studies of the distribution of radioactivity with height under various climatological conditions (before and after the passage of a warm front, in intramass advection, and with cyclonic circulation over land and water bodies). Orig. art. has: 2 figures, 2 formulas, and 1 table. [ER]

ASSOCIATION: none

SUBMITTED: 28Apr65

ENCL: 00

SUB CODE: ES, NP

NO REF SOV: 004

OTHER: 003

ATD PRESS: 4101

Card 1/1

L 3106-66 EWT(1)/ENT(m)/FCC/EWA(h) GS/GW

ACCESSION NR: AT5023938

UR/0000/65/000/000/0207/0216

AUTHOR: Styro, B. I.; Vebra, E. Yu.; Shopauskas, K. K.
44.55 44.55 44.55

TITLE: Radioactivity, sizes, and composition of α -radiating aerosols

SOURCE: Nauchnaya konferentsiya po yadernoy meteorologii. Obninsk, 1964. Radio-
aktivnyye izotopy v atmosfere i ikh ispol'zovaniye v meteorologii (Radioactive
isotopes in the atmosphere and their use in meteorology); doklady konferentsii.
Moscow, Atomizdat, 1965, 207-216

TOPIC TAGS: nuclear meteorology, micrometeorology, atmospheric pollution, radio-
active aerosol, hot particle, atmospheric boundary layer, temperature inversion

ABSTRACT: Basically, this paper is an elaboration of an earlier study of atmospheric
samples originally collected at altitudes of 0-2 km over the Vilnius area (results
published in Atomnaya energiya, no. 16, 1964), in which 20 α -radiating aerosol
particles had been discovered. Reexamination of these samples revealed the presence
of 42 additional particles of this type. These particles and one particle discovered
in studying the radioactive fogs of 19 October 1963 were examined by microphoto-
graphic techniques to determine the sizes, composition, and degree of radioactivity.
Orig. art. has: 5 figures and 1 table.

Card 1/1

L 3106-65

ACCESSION NR: AT5023938

ASSOCIATION: none

SUBMITTED: 28Apr65

ENCL: 00

SUB CODE: ES, NP

NO REF SOV: 002

OTHER: 001

ATD PRESS: 4101

PC
Card 2/2

L 18899-66 EWT(1)/EWT(m)/FCC/EWA(h) GW
ACC NR: AF6011119

SOURCE CODE: UR/0362/65/001/012/1299/1309

AUTHOR: Styro, B. I.--Styra, B. J.; Vebra, E. Yu.--Vebra, E. J.; Shopauskas, K. K.

ORG: none

TITLE: Determination of some parameters of removal of natural radioactive aerosols from the air

SOURCE: AN SSSR. Izvestiya. Fizika atmosfery i okeana, v. 1, no. 12, 1965, 1299-1309

TOPIC TAGS: atmospheric radioactivity, atmospheric cloud, gas filter, radioactive aerosol

ABSTRACT: The authors describe a method for measuring the radioactivity of air in the free atmosphere and within cloud systems by its filtration through porous filters and the screening of drops. The actual method was described in a previous paper by the author (Tr. AN LitSSR, Seriya B, 1(36), 1964). The authors have developed the theory of the experiment and derived formulas for computing the parameter of nonradioactive removal Λ of radioactive aerosols in cloud droplets. Two methods are proposed for determining Λ : on the basis of the profile of the concentration of radioactive substances in the air in a cloud and outside it and on the basis of disruption of radioactive equilibrium between the daughter products of radon decay in the cloud zone. On the basis of Λ and data in the literature on the drop concentration in a cloud the authors have computed the value of the coagulation coefficient K of radioactive

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UDC: 551.510.721

L 18899-66

ACC NR: AP6011119

aerosols on droplets, which on the average is equal to $3 \cdot 10^{-6}$ cm³/sec.
One shortcoming of the study is the assumption that the processes in the cloud zone are stationary, but at present this formulation is necessary.
Orig. art. has: 4 figures, 21 formulas, and 1 table. [JPRS]

SUB CODE: 18, 04 / SUBM DATE: 12Jun65 / ORIG REF: 009 / OTH REF: 002

Card 2/2 mc.

ACC NR: AP6034790

SOURCE CODE: UR/0251/66/043/002/0327/0334

AUTHORS: Styro, B. I.; Vebra, E. Yu.; Shopauskas, K. K.; Khundzhua, T. G.

ORG: Institute of Geophysics, Academy of Sciences Georgian SSR (Institut geofiziki Akademiya nauk Gruzinskoy SSR)

TITLE: On the problem of determining the coefficient of turbulent diffusion along vertical concentration profiles of radon decay products

SOURCE: AN GruzSSR. Soobshcheniya, v. 45, no. 2, 1966, 327-334

TOPIC TAGS: atmospheric diffusion, radon, free atmosphere, atmospheric turbulence, alpha particle, nuclear emulsion, aircraft/ A-2 nuclear emulsion, LI-2 aircraft, Yak-12 aircraft

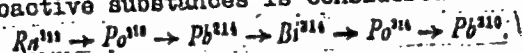
ABSTRACT: An experimental method for determining K_z along radioactivity profiles in the free atmosphere is described. For a layer of free atmosphere, it is assumed that the vertical distribution of the concentration of the i -th element of the radon chain is determined by solving a system of differential equations

$$\begin{aligned} \frac{d}{dz} \left(K_z \frac{dN_1}{dz} \right) - \lambda_1 N_1 &= 0; \\ \frac{d}{dz} \left(K_z \frac{dN_i}{dz} \right) - \lambda_i N_i + \lambda_{i-1} N_{i-1} &= 0. \end{aligned}$$

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ACC NR: AP6034790

The following chain of radioactive substances is considered:



Equations describing the profiles of the distribution of radon and three of its decay products are obtained:

$$N_i = \lambda_1 N_{1,0} \sum_{k=1}^i \frac{\prod_{l=1}^{i-1} \lambda_l}{\lambda_i \prod_{l=1}^{i-1} (\lambda_k - \lambda_l) \prod_{k=i+1}^i (\lambda_k - \lambda_l)} \exp \left\{ - \sqrt{\frac{\lambda_i}{k_s}} (z - h) \right\}.$$

$\gamma = 1, 2, 3, 4$

In the experimental part, the free atmosphere is obtained by filtering air through fibrous materials. A-2 nuclear emulsion is used as the detector. The atmosphere was sounded in the areas of Tbilisi and Vilnius with LI-2 and YaK-12 aircraft. The radioactivity was measured according to the number of alpha tracks/cm² of emulsion (see Fig. 1). The advantages of the method are simplicity and high sensitivity. This paper was presented by Academician F. F. Davitaya on 06 November 1965.

Cord 2/3

ACC NR: AP6034790

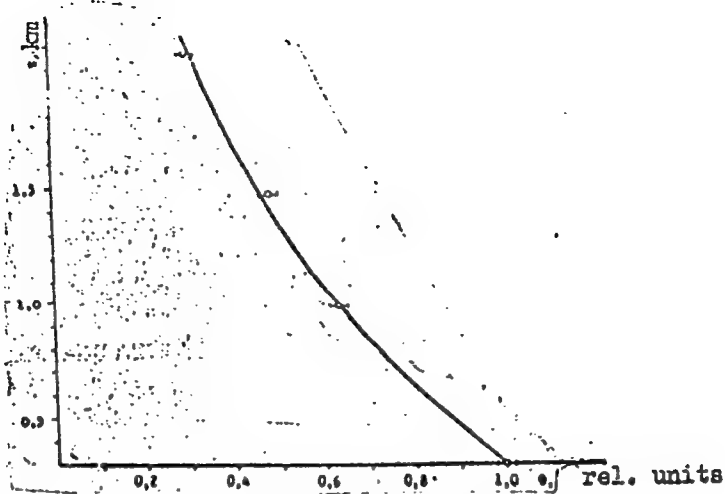


Fig. 1. Experimental curve of decrease in radioactivity with altitude (27 July 1962)

Orig. art. has: 12 formulas, 3 graphs, and 1 table.

SUB CODE: 20, 18, 04/ SUBM DATE: 06Nov65/ ORIG REF: 008/ OTH REF: 003

Card 3/3

SHOPE, R. E.

"An Account of the Observations Made by the United States Medical Mission
to the USSR, February-March 1956". Unpublished

SO: 3074341, 13 Feb 57

SHOPAN, I.P., general-mayer meditsinskoy sluzhby; LD INOYICH, L.S.,
podpolkovnik meditsinskoy sluzhby

An institution of communist labor. Voen.-med. zhurn. no. 4:9-11 '64.
(GIA 18:5)

9. 2120

S/194/62/000/011/010/062
D201/D308

AUTHOR: Shopen, L. V.

TITLE: Contactless magnetic logic elements for automation equipment (transformer circuit)

PERIODICAL: Referativnyy zhurnal, Avtomatika i radioelektronika, no. 11, 1962, 6, abstract 11-6-11ts (Tr. Mosk. energ. in-ta, no. 38, 1962, 329-348)

TEXT: A method is given of determining the design relationships for magnetic logic elements, as used in automation and remote control installations. Such elements may be designed on the basis of push-pull shift registers using a transformer circuit in which the structural unit is a relay element - a core made of a material having rectangular hysteresis loop. Basic experimental and theoretical data obtained from the derived relationships are compared in a table. 11 figures. 10 references. /-Abstracter's note: Complete translation. /

VB

Card 1/1

L 12236-63

S/271/63/000/004/034/045

AUTHOR: Shopen, I. V.

44

TITLE: A method for computing magnetic logical elements on transformer cells of a two-stage shift register

PERIODICAL: Referativnyy zhurnal, Avtomatika, telemekhanika i vychislitel'naya tekhnika, no. 4, 1963, 26, abstract 4B149 (Tr. Mosk. energ. in-ta, 1962, no. 39, 187-204)

TEXT: The author studies the problem of computing the elements of transformer cells with a minimum requirement of power feed in the circuit of a 2-cycle register shift. The initial parameters for the computation, apart from the characteristics of the magnetic core, are: 1. the elements circuit, which includes suppression and degree of information link of the register columns; 2. frequency and form of the cycle pulses; 3. resistance in the communication circuit; and 4. permissible temperature in prolonged operation. The author analytically determines the number of coils and the resistance of the windings, the minimal necessary supply voltage to guarantee stable transmission of binary information, and the supply power. A comparative characteristic is given for several sets of computed and experimental data obtained on elements employing a ribbon core of Perminvar. There are four

Card 1/2

L 12236-63

S/271/63/000/004/034/045

A method for computing

illustrations and a bibliography of three items. I. M.

[Abstracter's note: Complete translation]

Card 2/2

L 51373-65 EEC(b)-2/EWA(h)/EEC(k)-2/EWT(1)/T Pj-4/Pm-4/Pz-6/PeB IJP(c) GS

ACCESSION NR: AT5011630

UR/0000/64/000/000/0563/0567

33

B+1

AUTHOR: Shopen, L. V.

TITLE: Miniature magnetic-diode elements with a line-frequency voltage supply

SOURCE: Vsesoyuznoye soveshchaniye po magnitnym elementam avtomatiki, tele-
mekhaniki, izmeritel'noy i vychislitel'noy tekhniki. Lvov, 1962. Magnitnyye
elementy avtomatiki, telemekhaniki, izmeritel'noy i vychislitel'noy tekhniki
(Magnetic elements of automatic control, remote control, measurement and computer
engineering); trudy soveshchaniya. Kiev, Naukova dumka, 1964, 563-567

TOPIC TAGS: miniature magnetodiode element, magnetic amplifier, logical element,
magnetic diode, line frequency element

ABSTRACT: The widely used choke-coil type magnetic element circuits operating
at industrial line frequencies require large cores. Transition to transformer-
based elements considerably reduces the core size (L. V. Shopen, Trudy MEI, no.
39, 1962) but leads to complicated logical circuits (particularly in the case of
the "AND" element). The present paper describes a new scheme based on the well-
known Ramé magnetic amplifier combining the simplicity of the choke-coil magnetic
logical elements and the use of a very small core (made possible by the trans-
former-element mode of load connection). A simple element with a rectangular

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L 51373-65

ACCESSION NR: AT5011630

hysteresis loop core is shown in Fig. 1 of the Enclosure. The voltage e_1 striving to carry the core into the state "1" (point $+B_r$ on the hysteresis loop) is in counterphase with the voltage e_2 trying to bring the core into the state "0" (point $-B_r$). The cores were produced by the Institut tekhnoy mekhaniki i Vychislitel'noy tekhniki (Institute of Fine Mechanics and Computer Technology). They differ from elements proposed by J. Reiner (Proceedings of the National Electronics Conference, Vol. XIII; 1957, October 7-9) in that they do not require special displacement voltages and do not contain auxiliary diodes. Orig. art. has: 14 formulas and 6 figures.

ASSOCIATION: none

SUBMITTED: 29Sep64

ENCL: 01

SUB CODE: DP, EC

NO REF SOV: 003

OTHER: 001

Card 2/3

L 51373-65

ACCESSION NR: AT5011630

ENCLOSURE: 01

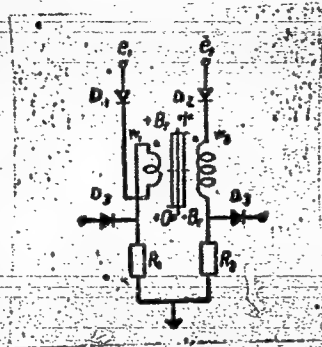


Fig. 1. Simple miniature magneto-diode element.

Card 3/3 *my*

L 00011-66 EWT(d)/EWT(1)/EWP(r)/EWP(k)/EWP(h)/EWP(1)/EWA(h)

ACCESSION NR: AR5008445

UR/0271/65/000/002/A025/A025

62-523:681.142.672

SOURCE: Ref. zh. Avtomatika, telemekhanika i vychislitel'naya tekhnika.
Svodnyy tom, Abs. 2A145

AUTHOR: Shopen, L. V.

TITLE: Contactless magnetic-diode transformer-type relay elements

CITED SOURCE: Tr. Mosk. energ. in-ta, vyp. 56, 1964, 301-311

TOPIC TAGS: magnetic diode element, contactless relay element, logical element

TRANSLATION: Two-cycle magnetic-diode transformer-type elements supplied by a commercial-frequency sinusoidal voltage are described. A magnetic relay element with one toroidal square-loop core and four windings is a basic structural element. It is designed for transmitting a signal to two identical elements. Trigger, inhibition, NOT, AND, and shift-register circuits are shown, and their test results are reported. A two-transistor amplifier is used as an amplifying element. Operation of the automatic control (on a gear-milling machine) consisting of the above elements is considered. Figs. 9. Bibl. 3.

Card 1/1

SUB CODE:

IE

ENCL: 00

SrOPENSKIY, A. P.

Dissertation: "Quick Refrigeration for Low-grade Products." Cand Tech Sci, Moscow
Chemicotechnological Inst of the Oil Industry, Moscow 1953.

W-30928

SO: Referativnyy Zhurnal, No. 5, Dec 1953, Moscow, AN USSR (N-~~19950~~)

SHOPENSKIY, A., kandidat tekhnicheskikh nauk.

An economical standard building plan for meat combines. Mias.
ind. SSSR 26 no.6:30-35 '55. (MLRA 9:2)

1. Moskovskiy tekhnologicheskiy institut myasnoy i molochnoy
promyshlennosti.
(Packing houses)

KHRISTODULO, D., professor; SHOPENSKIY, A., kandidat tekhnicheskikh nauk.

Single-stage method of refrigerating fresh packing-house by-products.
Mias.ind.SSSR 27 no.3:10-12 '56. (MIRA 9:9)
(Meat industry--By-products)(Refrigeration and refrigerating machinery)

SOKOLOV, Aleksandr Aleksandrovich, dotsent; PAVLOV, Dmitriy Vasil'yevich, dotsent; BCL'SHAKOV, Aleksey Sergeyevich, dotsent; ZHURAVSKAYA, Nina Konstantinovna, dotsent; SHOPENSKIY, Andrey Pavlovich, dotsent; DYKLOP, Eduard Petrovich, dotsent; MANERBERGER, A.A., spetsred.; KORBUT, L.V., red.; SOKOLOVA, I.A., tekhn.red.

[Technology of meat and meat products] Tekhnologiya miassa i miaso-produktov. Moskva, Pishchepromizdat, 1960. 672 p.

(MIRA 14:4)

(Meat industry)

LOBACHEV, P.V., kand. tekhn. nauk; SHOPETSKIY, L.A.

Some methods of improving the performance of water pipes in
buildings. Sbor. trud. NIIST no.11:69-88 '62 (MIRA 18:1)

SHOPENSKIY, L.A.

Determining heat consumption for the needs of the hot-water
supply in apartment houses. Sbor. trud. NIIST no.11:89-105 '62
(MIRA 18:1)

SHOPENSKIY, L.A., inzh.

Nomogram for analysis of water pipes inside residential buildings.
Vod.i san.tekh. no.2:27-29 F '63. (MIRA 16:2)
(Water pipes)

KACHANOV, N.F., inzh.; SHOPENSKIY, L.A., inzh.

New standards for the design of hot-water supply. Vod.i san.
tekhn. no.4:32-34 Ap '63. (MIRA 16:4)
(Hot-water supply--Standards)

KACHANOV, N.F., inzh., red.; SHOPENSKIY, L.A., inzh., red.; IFTINKA, G.A., red. izd-va; POCHALINA, Z.S., tekhn. red.

[Construction specifications and regulations] Stroitel'nye normy i pravila. Moskva, Gosstroizdat. Pt.2. Sec.G. ch.8. [Hot-water supply; standards of design] Goriachee vodo-snabzhenie; normy proektirovaniia (SNiP II-G. 8-62). 1963. 11 p. (MIRA 16:9)

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Shor. trad. NIIST no.11:89-93 '63.

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in the direct supply of water from a heating network. Vod. 1 san.
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SO: Knizhnaya Letopis' No 43, October 1956, Moscow

COUNTRY : USSR 0
CATEGORY : Plant Diseases. Diseases of Cultivated
Plants.
ABS. JOUR. : RZBiol., No.12, 1958, No.53989
AUTHOR : Shopina, V.V.
INST. : The All-Union Academy of Agricultural *
TITLE : The Role of Preceding Crops in Changes in
Wheat's Susceptibility to Leaf Rust
ORIG. PUB. : Dokl. VASKhNIL, 1957, No. 9, 34-36
ABSTRACT : In Krasnodarskiy Kray a strong susceptibility
to leaf rust was observed in Novoukrainka 83
wheat and other varieties planted on black
fallow after cotton, and weaker infection
after corn and sunflower. Soil analyses
showed a high nitrate content in the black
fallow and cotton soil and an even higher K
content in the sunflower and corn soil. The
total N content in the wheat leaves on the
* Sciences imeni V.I. Lenin
CARD: 1/2

SHOPINA, V.V.

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leaf rust. Trudy VIZR no.10:183-192 '58. (MIRA 12:1)
(Wheat--Diseases and pests) (Rusts (Fungi))

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Zashch. rast. ot vred. i bol. 5 no.11:34-36 N '60.
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1. Laboratoriya immuniteta Vsesoyuznogo instituta zashchity
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1. SHOPINTSEV, B. A.
2. USSR (600)
4. Sea Water-Black Sea
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USSR / Soil Science. Physical and Chemical Properties of Soil. J

Abs Jour : Ref Zhur - Biologiya, No 11, 1958, No. 48628

Author : Shopkhoyev, S. P.

Inst : Stavropol Agricultural Institute

Title : A Method for the Determination of Nitrates in the Soil

Orig Pub : Tr. Stavropol'sk. s.-kh. in-ta, 1956, vyp 7, 231-234

Abstract : Among the methods of nitrate determination, inconsistent data exists in regard to the time of determination from the moment of taking the soil samples. Experiments were conducted on samples of average and light loam soils from the leached central Cis-Caucasian chernozem soils. Nitrates were determined calorimetrically

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(Stavropol Territory--Chernozem soils)
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Lowland. Khidrotekh i melior 9 no. 3:86-88 '64.

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elliptic differential equations depending on a small parameter
before derivatives of the second order. Godishnik mash elekt
12 no. 1:46-52 '62 [publ. '63].

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spectroscopy", vol. 1. Usp. fiz. nauk 73 no. 1:187-195 Ja '61.
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2. USSR (600)
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1. Institut meditsinskoy radiologii AMN SSSR, gorod Obninsk
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no.lz:52-53 D '63. (MIRA 18:12)

CHAPOV, A.

Meteorology for glider pilots. p. 21.

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I. P. Pavlov - Plovdiv (direktor: prof. As. Shopov)
(TUBERCULOSIS, PULMONARY, complications,
silicosis, in miners)
(SILICOSES, complications,
tuberc., in miners)
(MINING,
silicotuberc. in miners)

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No. 5, May 1955, Uncl.

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classif.)

SHOPOV, As., prof.; TODOROV, St., dots.

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Scientific Investigation on Tuberculosis of USSR. Suvrem. med.,
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institute of tuberc. in Russia. (Bul))

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in Bulgaria (Rus))

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classif. & nomenclature in various countries (Bul))

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1. Kafedra fiziologii i pul'monologii Meditsinskogo instituta im. I.P. Pavlova, Plovdiv, Narodnaya Respublika Bolgariya.

(LUNGS, physiology

intrapleural fixation for physiol. exper. (Rus))

SHOPOV,As.; DIMITROV,D.A.; IONCHEV,V.; MARINOV,At.; KOSTURKOVA,M.

On the treatment of pulmonary tuberculosis with cycloserine.
Suvrem. med., Sofia 11 no.2-3:47-57 '60.

1. Iz Klinikata po ftiznatriia pri VMI "I.P.Pavlov" - Plovdiv,
Direktor: prof. As. Shopov; i Klinikata po psikhiaatriia pri
Sushtia Institut,Direktor: prof. K. Cholakov.

(CYCLOSERINE ther.)

(TUBERCULOSIS PULMONARY ther.)

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Postoperative reexpansion of the chest wall in certain types of
thoracoplasty. Khirurgiia 35 no.8:40-43 Ag '59. (MIRA 13:12)
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IZRAEL, S.; SHOPOV, D.

Distribution of wages in accordance to the direct dividing group
system. Trud i tseni 3 no.9:29-39 '61.

(Wages)

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Mashinostroene 10 no.10:35-40 0 '61.

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BULG.

3

Synthesis with the magnesium halide derivative of 2-furylacetic acid. D. Ivanov and D. Shoyev, *Compt. rend. acad. bulgare sci.* 5, No. 2/3, 29-31 (1953) (Publ. 1953) (in French).—To a soln. of the Mg halide deriv. of 2-furylacetic acid (prepd. by treating the acid with $\text{iso-C}_4\text{H}_9\text{MgCl}$ in Et_2O), a ketone, dissolved in Et_2O , was added, and after hydrolysis, the product isolated. The following acids were prepd.: 52% 3,3-diphenyl-3-hydroxy-2-(2-furyl)propionic acid, m. 177-8°, from Ph_2CO ; 55% 3-hydroxy-3-methyl-2-phenyl-2-(2-furyl)propionic acid, m. 128.5-9.5°, from PhCOMe ; 65.5% $\text{UzCH}_2\text{ClPhCH(2-C}_4\text{H}_7\text{O)CO}_2\text{H}$, m. 210-11°, from chalcone. When PhMgBr was treated with 2-furylacetic acid 40% 2,1-bis(2-furyl)-3-hydroxy-3-phenylbutyric acid, m. 171-2°, was obtained. G. Meguerian

AM 2/24

SHOPOV, D.

Role of piecework in increasing labor productivity on cooperative farms. p. 4.
(Kooprativno Zemedelie Vol. 10, no. 8, Aug. 1955, Sofiya)

SO: Monthly List of East European Accessions, (EEAL). LC, Vol. 4, No.11,
Nov. 1955, Uncl.

COUNTRY	: Bulgaria	H-23
CATEGORY	:	
ABS. JOUR.	: RZhim., No. 22 1959, No.	79790
AUTHOR	: Shopov, D.	
INST.	: Chemical Institute of the Bulgarian Academy of	
TITLE	: Group and Group-Structural Analysis of the Kerosene Fraction from Tyulenevo Crude	
ORIG. PUB.	: Izvestiya Zhim Inst Bolg Akad Nauk, 5, 237-266 (1957)	
ABSTRACT	: The kerosene fraction from Tyulenevo crude contains (in %) aromatic hydrocarbons 11, naphthenic hydrocarbons 68, and paraffinic hydrocarbons 21. Of the naphthenic hydrocarbons, 5% (cyclohexanes) undergo dehydrogenation, while 63% are unreactive towards a Pt catalyst. The greater portion of the hydrocarbons in the kerosene fraction are bicyclic. The average number of rings in the 200-220° fraction is 1.6 (1.7), and for the 235-300° fraction, 2.2. G. Margolina	
CARD: 1/1	Sciences	237

SHOPOV, D.

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p. 453 (Izvestiia, Vol. 5, 1957, Sofia, Bulgaria)

Monthly Index of East European Accessions (EEAI) LC, Vol. 7, No. 8, August 1958

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Distr: 4E3d

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novo crude oil. D. Shupov and Ya. Stefanovskii. Compl. 4
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aromatic part of this fraction consists mainly of hydroan-
thracene derivs. 1
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"Question on determining the standard of operating and the standard of production in operating many machines."

TEZHKA PROMISHLENOST, Sofia, Bulgaria, Vol. 8, no. 5, Mar, 1959

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Unclass

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"Chemical composition of benzine produced by cracking process from Tiulenovo petroleum. I. Group composition of benzine produced by catalytic cracking process of gasoline fractions." In German. p. 53

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SHAPOV, D.

Distr: 4E3d

Kinetics of the repeated cracking of the kerosine-gas oil fraction of Tyulenovo crude oil. Khr. Dimitrov and D. Shapov. *Compt. rend. acad. bulgare sci.* 12, 153-5 (1957). (in English).—The rate of decompn. of the kerosine-gas oil fraction of Tyulenovo crude oil decreased with the deepening of catalytic cracking. The apparent activation energy of the 2nd cracking pass was 15,500 cal./mol. From a crude oil which had yielded 31% of gasoline in the 1st cracking pass over a Houdry-type silica-alumina catalyst, an amt. of gasoline equiv. to an addnl. 21% of the original oil was obtained by a 2nd cracking pass at 510°. The gasoline from the 2nd pass is rich in aromatic hydrocarbons. Cracking at 410–510° increases the yield proportional to the temp., but the yield is lowered when the space velocity is increased. n and d of the gasoline also increase with temp. and decrease with increasing space velocity, whereas the trend for the aniline points is reversed. The product obtained at 510° and a space velocity of 0.6/hr. had n_D^{20} 1.4504, d_4^{20} 0.7081, and an aniline point of 23.3°; it was obtained in 29.8% yield from the charge to the 2nd cracking pass.

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SHOPOV, D.; IVANOV, S.

On the composition of cracking benzines from Tiulenovo petroleum;
high temperature cracking of the fraction 200°-380° of Tiulenovo
petroleum. III. Group composition of produced benzine. Izv Inst khim
BAN 7:379-398 '60. (EEAI 10:9)

1. Khimicheski institut pri BAN.

(Cracking process) (Petroleum) (Ligroine)

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Successes of the Bulgarian chemistry for the 15 years under the
people's government. Izv Inst khim BAN 7:413-420 '60.
(EEAI 10:9)

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V. Composition of aromatic hydrocarbons in kerosene obtained through catalytic cracking of gas oil reaction. Doklady BAN 15 no.2:163-166 '62.

1. Submitted by Corresponding Member B. Kourtev [Kurtev, B.].

KAISHEV, Kr., dots.; SHOPOV, D.; DAVIDOVA, N.

Chemical composition of the natural gasoline condensate from the gas deposits in the valley of Kamchiya River. Godishnik khim tekhn 8 no.1:135-151 '61 [publ. '62].

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SHOPOV, D.; PENGHEV, V.; ANDREEV, A.

Hydrocarbon changes in hydrocarbon naphthene-paraffin part of fraction 400-450° of Tyulenovo oil after-low-temperature catalytic treatment. Doklady BAN 16 no.1:81-84 '63.

1. Submitted by Corresponding Member B. Kourtev [Kurtev, B.].

SHOPOV, D.; KOTSEV, N.; GEORGIEVA, K.

Identification of C₇-C₉ aromatic hydrocarbons from catalytic gasoline by means of gas-liquid chromatography. Acta chimica Hung 37 no.2:137-146 '63.

1. Institut organicheskoy khimii Bolgarskoy akademii nauk, Sofiya.

SHOREV, G.; BORISOV, G.; IVANOV, E.

Addition of dialkylphosphites to phenylfurylketone and methylfurylketone. Doklady BAN 17 no.5:471-474 '64

1. Predstavleno chlenom-korrespondentom B.Kurtevym.

SHOPOV, D.; ANDREEV, A.

Study of high-boiling petroleum fractions by means of infrared spectroscopy. Khim i industriia 36 no. 2:60-64.

ANDREEV, St.; TOSHKOV, D.; IVANOV, Sl.; SHOPOV, D.

Comparative stand testing of the regenerated motor oil 18
with addition of DM-3B and ZIATIM-339 in a full-sized motor.
Khim i industriia 36 no.5:187-188 '64

L 36481-65

ACCESSION NR: AP5010565

UR/0204/64/004/005/0798/0803

AUTHOR: Shopov, D.; Dyankov, St.; Kotsev, N.; Chausheva, L.; Palazov, At.

TITLE: Investigation of aromatic hydrocarbons of Pleven Petroleum

SOURCE: Neftekhimiya, v. 4, no. 5, 1964, 798-803

TOPIC TAGS: aromatic hydrocarbon, gasoline, petroleum, chromatographic analysis, IR spectroscopy

Abstract: The aromatic hydrocarbons of gasoline isolated from petroleum in the region of Dolni-Dybnik, Plevenskaya Oblast, were investigated by chromatography and infrared spectroscopy. The aromatic portion of the gasoline fraction of this petroleum contained 34 hydrocarbons; 31 were identified by infrared absorption spectra. The structural type was established for the other hydrocarbons. Orig. art. has 5 graphs and 2 tables.

ASSOCIATION: Institut organicheskoy khimii Bolgarakoy Akademii nauk (Institute of Organic Chemistry, Bulgarian Academy of Sciences)

SUBMITTED: 24Feb64

ENCL: 00

SUB CODE: FP, OP

NO REF SOV: 003

OTHER: 009

JPRS

Card 1/1

L 51878-65 ENT(m)/EPF(c)/T Pr-4 WE

UR/0204/64/004/006/0813/0818

ACCESSION NR: AP5017010

AUTHOR: Shopov, D.; Penchev, Vl.; Davidova, N.

TITLE: Composition of the solid hydrocarbons of petroleum

SOURCE: Neftekhimiya, v. 4, no. 6, 1964, 813-818

TOPIC TAGS: petroleum, hydrocarbon, paraffin wax, chemical compound

ABSTRACT: The naphthenic-aromatic solid hydrocarbons of petroleum of the Tyulenovo region (Bulgaria) were investigated by dewaxing the deasphalted products, deoiling of the petrolatum obtained, chromatographic separation of the solid hydrocarbons on silica gel, treatment of the naphthenic-paraffin fraction with urea, separation of the fraction that does not form complexes with the urea on activated charcoal, and spectral investigations and photomicrography in polarized light for the individual crystalline fractions. The infrared spectra showed that these solid hydrocarbons consist chiefly of saturated hydrocarbons of the paraffin and naphthene-paraffin series. The relative content of naphthene rings in the paraffin-

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L 51878-65

ACCESSION NR: AP5017010

naphthene hydrocarbons is negligible in comparison with the content of paraffin chains. The condensed and polysubstituted naphthene rings do not participate in the construction of the molecule. Hydrocarbons containing aromatic rings are present in negligible amounts (one to two per molecule).

Orig. art. has: 5 figures, 2 graphs, 3 tables.

ASSOCIATION: Institut organicheskoj khimii Bolgarskoj Akademii nauk (Institute of Organic Chemistry, Bulgarian Academy of Sciences)

SUBMITTED: 24Feb64

ENCL: 00

SUB CODE: FP, GC

NO REF SOV: 006

OTHER: 006

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Card

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SHOPOV Dimitar

Some problems of the analysis of labor norms in industrial enterprises. Trud tseni 6 no.10:1-13 '64.

KOTSEV, N.; SHOPOV, D.

A highly sensitive laboratory capillary chromatograph. Khim i
industriia 36 no.10:383-385 '64.

L 62080-65 EPF(c)/EPR/EWP(j)/T/EWT(m) Pc-4/Pr-4/Ps-4 RM/WW

ACCESSION NR: AP5016844

UR/0204/65/005/003/0410/0416

547.568.1'118.5'122.1'.143.1:542.978.541.124

AUTHORS: Shepov, D.; Ivanov, Sl. K.

TITLE: On the inhibiting action of barium dibenzylthiophosphate and of its decomposition products

SOURCE: Neftekhimiya, v. 5, no. 3, 1965, 410-416

TOPIC TAGS: corrosion preventative, corrosion protection, oxidation inhibition, inhibitor, barium, barium organic compound/ DK 2 corrosion testing device

ABSTRACT: Thermal decomposition of dibenzylthiophosphate and the antioxidation and anticorrosion action of its barium salt were studied at 140C under pure nitrogen. The procedure resulted in the formation of dibenzylsulfide, hydrogen sulfide, benzylmercaptan, and an inorganic residue. Anticorrosive properties of barium dibenzylthiophosphate were studied in the 440-460C fraction of the Tyulenovskaya oil containing 2% of the salt. Its corrosive effect on a lead plate was measured in the DK-2 testing device. Antioxidation properties of this salt were investigated in the process of cumene hydrogen peroxide decomposition in vaseline by the procedure described by J. R. Thomas (J. Amer. Chem. Soc. 77, 246, Card 1/2)

L 62080-65

ACCESSION NR: AP5016844

1955). Kinetics of both processes are shown graphically. It was noted that oil containing 2% of the salt showed no corrosive action after 118 hours. It proved to be superior as a preventative to the barium cyclohexyldithiophosphate. Protective properties of both substances bore a direct relation to their thermal stability and to other decomposition products. High protective power of the barium salt was ascribed to its low thermal stability and to the formation of sulfur-containing decomposition products at 140C. It is shown analytically that barium dibenzylidithiophosphate and its decomposition product dibenzylsulfide decomposed cumene peroxide faster than hydrogen peroxide is decomposed thermally. The velocity constants of both barium salt and of its decomposition product were of the same order. Considering the synergism of the decomposition products, their action may be stronger than that of the salt itself. Orig. art. has: 3 tables, 4 figures, and 13 formulas.

ASSOCIATION: Institut organicheskoy khimii Bolgarskoy AN, Sofiya (Institute of Organic Chemistry, Bulgarian Academy of Sciences)

SUBMITTED: 24Mar64

ENCL: 00

SUB CODE: OC, MM

NO REF SOV: 001

OTHER: 013

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